AN INVESTIGATION OF HEAVY METALS RETENTION IN LIME STABILISED SOIL

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ABSTRACT. *The retention of heavy metals namely Cr and Zn in unstabilised and lime stabilised soil, is investigated by means of leaching test. The soil samples were collected from the weathered sedimentary rock of Crocker Formation from Telipok, Sabah. The Cr and Zn analysis conducted in unstabilised and lime stabilised soils samples after leaching test shows that both of the heavy metals are retained at the top part of the soil columns i.e. at the depth of 1.0 cm. The concentration of Cr and Zn decreased with increasing soil column depth. The leachate analysis shows that Cr and Zn in unstabilised sample achieved the breakthrough curve after 4 pore volume (PV) of leaching. On the other hand, very low concentrations of Cr and Zn were detected in the leachate of the lime-stabilised soil sample. This indicates that Cr, and Zn are significantly being retained in lime stabilised sample compared to the unstabilised sample. The top layer of the stabilised sample shows the dissolution of cementitious minerals and formation of channels. However, at the bottom layer, microstructure analysis shows the cementitious minerals were flocculated, linked, and clogged with the fine particles in pore spaces.*